

## REMARKS

Claims 27, 28, 30 - 37 and 42-46 are all the claims pending in the application. Claims 30, 36, 42 and 44-46 are amended. New claims 48 and 49 are added.

### Support for Amendments

The amendments to claims 30 and 42 include the explicit recital of the elements of a field-effect transistor, which are mentioned at page 10 of the specification.

Complementary amendments are made to dependent claims 36 and 44 to 46.

New dependent claims 48 and 49 provide additional detail.

### *Specification*

Applicant greatly appreciates the Examiner's withdrawal of the objection to the disclosure.

### *Claim Rejections - 35 USC § 112*

**Claims 30-37 and 42-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite.** This rejection is traversed for at least the following reasons.

The Examiner asserts that "claims 30 and 42 are incomplete because they set forth the defining of a microchannel and a pair of electrodes in a single operation and followed by a step of placing a flow of liquid or gas in said microchannel, but fails to set forth the essential steps that must occur between this single operation and the use of the device as a sensor with a flow channel."

The claims have been amended to recite plural steps, in a manner that would remove the basis for rejection as articulated by the Examiner.

Specifically, with respect to the detailed explanation of the rejection given by the Examiner at section 4, lines 8 to 15 of the Office Action, the Examiner has made the comment

at page 3, lines 1 to 3 of the Office Action that: the channel formed by the single operation in some of the described embodiments is not the same channel utilized for the sensing of the liquid or gas..

Applicant respectfully submits that, while the dimensions of the channel formed by the single operation can change as a result of further processing steps in some embodiments, all the described embodiments share the feature that at least a portion of the channel formed by the single operation remains for receiving a flow of a liquid or gas.

The Examiner acknowledges this fact at section 4, lines 10 to 12 of the Office Action where the Examiner states: “[the] microfluidic channel that receives a flow of liquid or gas for the sending... is the portion of this channel left after a number of additional layers are placed within this channel” (emphasis added).

Amended independent claims 30 and 42 now include a limitation that is based upon this statement of the Examiner with the aim of helping to overcome the first-part of the 35 USC 112 rejection.

The amendments to independent claims 30 and 42 include further amendments aimed at dealing with the second part of the 35 USC 112 rejection set out at page 3, lines 3 to 14 of the Office Action. In particular, Applicant understands that the Examiner is of the view that the claims should positively recite the formation of the transistor, and the amendments to independent claims 30 and 42 include further amendments intended to follow this suggestion of the Examiner for these claims.

However, with reference to the Examiner’s comments at page 3, lines 5-6 of the Office Action, Applicant would note that these amendments to claims 30 and 42 are not intended to limit these claims to the case where one or more of the remaining ones of the recited elements of

the transistor are formed over the pair of electrodes defined by the single operation. Amended claims 30 and 42 are intended to also cover, for example, the case where one or more of the recited elements of the transistor are formed before the single operation.

In this connection, Applicant notes that the use of a transistor for sensing a property of a liquid or gas does NOT necessarily depend on sensitivity of the gate electrode to the liquid or gas. The sensing mechanism could, for example, alternatively rely on a sensitivity of the active semiconducting layer to the liquid or gas, which would not require the gate electrode to be “placed in the bottom of the formed flow channel”, to use the phrase of the Examiner.

On the basis of the foregoing remarks and the amendments to the claims, Applicant respectfully submits that the basis for rejection have been removed and that the rejection should be withdrawn.

***Claim Rejections - 35 USC § 102/§ 103***

**Claims 30-37, 42 and 43 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bhullar et al (USP 6,676,815) with evidence from White et al (USP 5,405,511).** This rejection is traversed for at least the following reasons.

In framing the rejection, the Examiner comments that “Bhullar and White are being cited and relied on for the first time with this office action. Their use here was necessitated by applicant's amendment to claims 30 and 42.”

In the detailed explanation of the rejection, Applicant notes that the Examiner does not include a finding that the cited prior art teaches the use of the techniques described therein for forming the electrodes of a field-effect transistor; and Applicant could also not find any such teaching in the cited references.

Such feature is a limitation of the claimed subject matter and, on that basis, the invention is distinguishable over the prior art.

***Allowable Subject Matter***

Claims 27 and 28 are allowed. Applicants greatly appreciate the Examiner's indication of allowable subject matter.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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**23373**

CUSTOMER NUMBER

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